

Ch:3

* Managing the information systems Project

We Focus on Project management

→ to ensure that information system Projects meet Customer expectations such that:

⇒ Delivered in a timely manner.

⇒ meet Functional Constraints and requirements.

Project manager

→ responsible for:

a) Project initiation.

b) Planning.

c) execution.

d) Closing down

→ His activities include:

a) management

b) Leadership.

c) Problem solving.

~~✱~~ d) Conflict management. e) customer relations.

f) Team management.

g) Risk & change management.

Project management Process

→ Project definition

→ Planned undertaking of related activities to reach an objective has a beginning and an end.

Phases of Project management

[1] initiation

- a) establish project initiation team.
- b) " relationship with customer.
- c) " project initiation Plan.
- d) " management Procedures.
- e) " project management environment and workbook.

[2] Planning the Project

- describe project scope, alternatives and Feasibility.
- divide the project into manageable tasks.
- estimate resources & make resource Plan.
- develop preliminary schedule (Gantt & PERT charts)

→ develop Communication Plan among Customers, team members and management.

→ Determine Project standards and Procedures and specify how output are tested and produced.

→ identify the assess risk.

- identify sources of risk.

- Estimate consequences of risk.

→ Create a Preliminary budget.

→ set a Baseline Project Plan.

↳ estimate Project's tasks and resources.

[3] Executing the Project

→ execute Baseline Project Plan.

- a) train new team members.

- b) Keep Project on schedule.

- c) Acquire and assign resources.

→ monitor Project Process

- a) adjust resources, budget and/or activities.

→ manage change to Baseline Project Plan

- a) changes in completion dates.

- b) changes in Personnel.

- c) new activities.

4] closing down the Project

- Termination
 - Natural (requirements have been met)
 - unnatural (project stopped)
- Documentation.
- Personnel Assessment.

* Gantt charts

- useful for depicting simple projects or parts of large projects
- show start and completion dates for individual tasks.

* Pert chart

- show order of activities.
- ~~Key collection~~

Gantt	PERT
→ Visually shows duration of tasks.	→ Visually shows dependencies between tasks.
→ Visually shows time overlap between tasks.	→ Visually shows which tasks can be done in parallel.
→ Visually shows slack time.	→ shows slack time by data in rectangles.

* Estimating time

→ Project is broken down into:

a) Phases. b) tasks or activities.

c) steps or smaller units.

→ time is estimated for each task or activity.

$$ET = (O + 4r + P) / 6$$

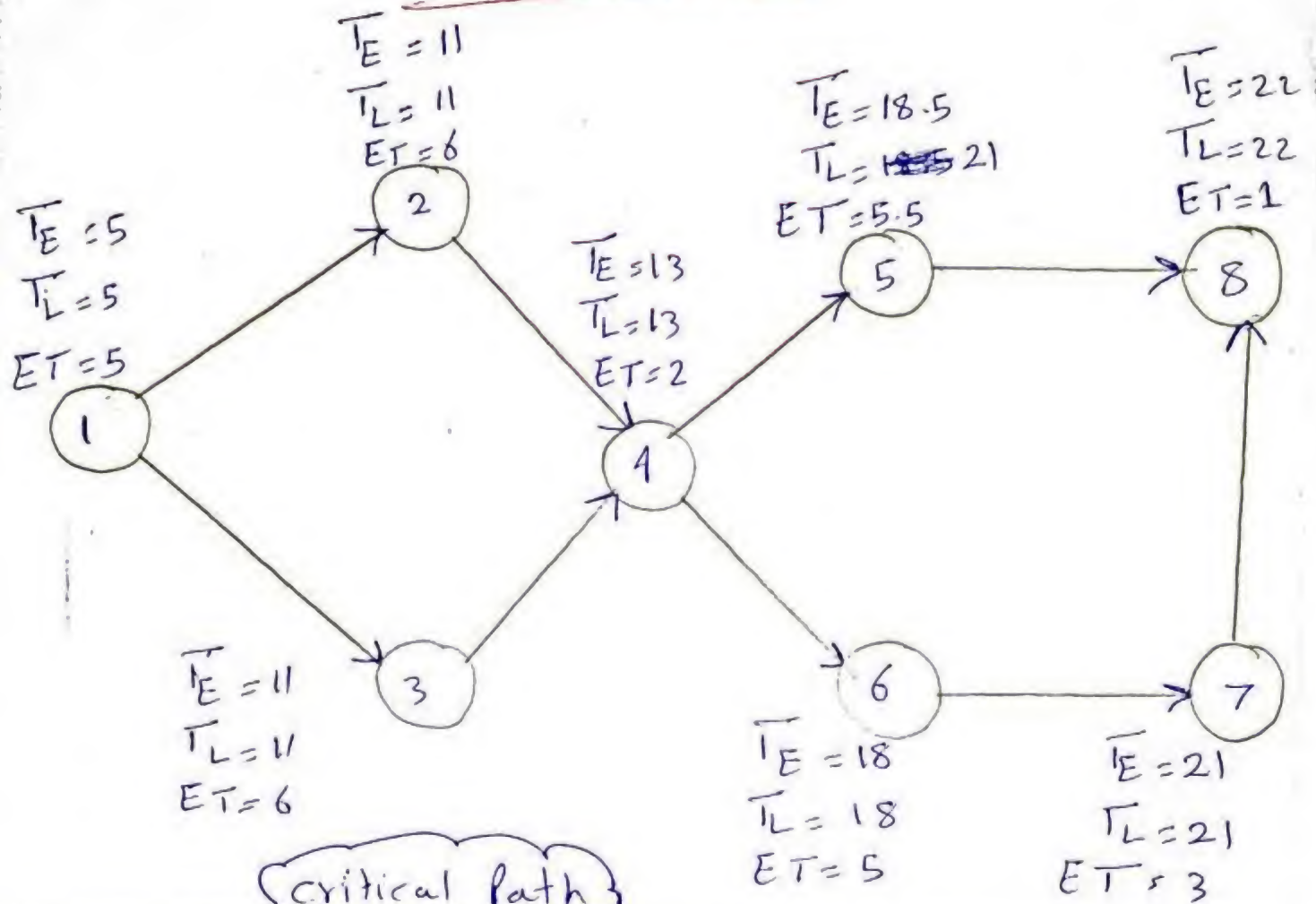
Activity.	Time estimate			Expected time (ET)	
	O	r	P		
1) Requirements Collection	1	5	9	5	—
2) Screen design	5	6	7	6	1
3) Report design.	3	6	9	6	1
4) Database design	1	2	3	2	2, 3
5) user documentation.	3	6	6	5.5	4
6) software Programming	4	5	6	5	4
7) Testing.	1	3	5	3	6
8) installation.	1	1	1	1	5, 7

⑤ Preceding activity



sequence of Activities

Pert chart



Activity	T_E	T_L	slacktime $T_L - T_E$	on critical path
1	5	5	0	✓
2	11	11	0	✓
3	11	11	0	✓
4	13	13	0	✓
5	18.5 18.5	21	2.5	—
6	18	18	0	✓
7	21	21	0	✓
8	22	22	0	✓

Initiating and Planning system Development Projects

* Deliverables and Outcomes:-

→ Baseline Project Plan (BPP)

(Scope, Benefits, Costs, Risks, Resources)

→ Statement of Work (SOW)

- Describe deliverables.

- outlines work needed to be performed.

Assessing Project Feasibility

* Six Categories

(Economic, technical, operational, schedule, legal and contractual, political)

* Tangible benefits

→ Can be measured easily in money.

Examples

- * Cost reduction and avoidance.

- * Error reduction.
- * Increased flexibility.

- * Increased speed of activity.

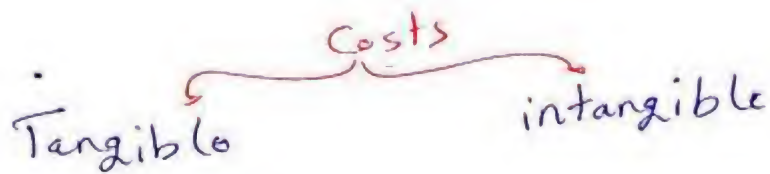
- * Open new markets and increasing sales opportunities.

* Intangible Benefits

* Cannot be measured easily in money.

Examples

- * increased employee morale/confidence.
- * Competitive necessity.
- * more timely information.
- * Encouragement of organizational learning and understanding.



A) Tangible Costs

↳ can easily be measured in money.

Examples

Procurement

* Consulting Costs.

* Equipment Purchase.

* site Preparation.

* management & staff time.

Project related

* Application SW.

* software modification.

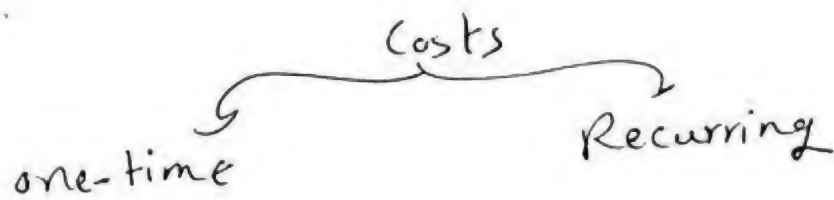
B) Intangible Costs

↳ cannot be easily measured in money.

Examples

↳ loss of customer Kindness / Care.

↳ loss of employee confidence.



* One time Costs

↳ Associated with Project startup, initiation and development.

Examples

* System development.

* user training.

* site Preparation.

* Data or system Conversion.

* new Hardware or software Purchases.

* Recurring Costs

↳ Associated with ongoing use of system.

Examples

* Application software maintenance.

* Incremental data storage expense.

* new software and hardware releases.

* incremental Communications.

* Time value of money

↳ Process of comparing present cash outlays to future expected returns.

→ All costs & benefits must be viewed in relation to their present value (PV)

$$PV_n = Y \times \frac{1}{(1+i)^n}$$

$\rightarrow i: \text{Constant} = 0.1$
 $n: \text{no. of } Y$

	Y_1 $n=1$	Y_2 $n=2$ $n=3$	Y_3	
	1500	1500	1500	1500
PV	1363.636	1239.669	1126.97	
NPV	1363.636	2603.31	3730.275	

* overall NPV = NPV of benefit - NPV of costs

* overall ROI = overall NPV / NPV of all costs.

Economic Cost-benefit analysis techniques

1) Net Present Value (NPV)

used a discount rate to establish the present value of a project.

2) Return of investment (ROI)

→ ratio of net cash receipts of the project divided by cash outlays.

3) Break-Even analysis (BEA)

↳ Finds amount of time required for the cumulative cash flow from a project to equal its initial investment.

Assessment technical Feasibility

→ It is assessment of development organization's ability to construct a proposed system.

→ Project risk can be assessed based upon:-

* Project size. * Project structure.

* Development group's experience with the app.

* User group's experience with development projects and application area.

Project size

- no. of members in Project team.
- Project duration time.
- no. of organizational departments.

Project Structure

- organizational, procedural, structural, or Personnel changes resulting for system.
- user perceptions and willingness.
- new system or renovation of existing system.

Development Group

- Familiarity with proposed app. area.
- " with building similar systems of similar size.

		low structure	High structure
High Familiarity with technology or app. area.	Large	low risk	low risk
	Project Small Project	very low risk	very low risk
Low Familiarity with Technology or app. area	Large Project	very high risk	Medium risk
	Small Project	High risk	Medium-low risk

* Operational Feasibility

→ Assessment of how a proposed system solves business problems or takes advantage of opportunities.

* Schedule Feasibility

→ Assessment of time frame and project completion dates with respect to organization constraints for affecting change.

* Legal and Contractual Feasibility

→ Assessment of legal and contractual consequences of new sys. (Copyright, foreign trade regulations)

* Political Feasibility

→ Assessment of key stakeholders in organization's view toward proposed system.

Project Failure

it may be prevented by

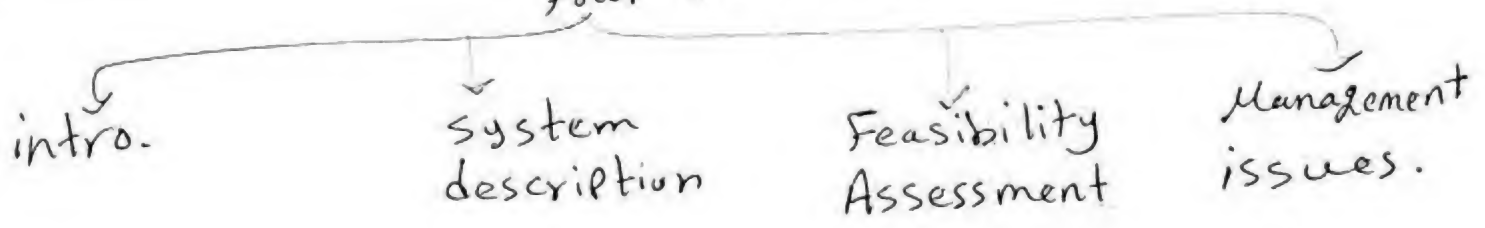
- a) training
- b) experience
- c) learning why other projects have failed.

Building Baseline Project Plan

Objectives

- * Assures that customer and development group have a complete understanding of proposed system and requirements.
- * Provides sponsoring organization with clear idea of scope, benefits & duration of project.

Four sections



1) Introduction

- * Brief overview.
- * recommended course of action.
- * Project scope definition.
 - units affected.
 - interaction with other systems.
 - Range of system capabilities.
 - who inside and outside organization would be involved.

2) System description:

- outline of possible alternative solutions.
- Narrative & format of selected solution.

3) Feasibility assessment:

- Project costs & benefits. → technical difficulties.
- High-level project schedules.

4) Management Issues

- Team composition. → communication plan.
- Project standards and procedures.
- other project-specific topics.

Reviewing Baseline Project Plan

*objectives

- Assure conformity or organizational standards.
- All parties agree to continue the project.

*walkthrough

- It is a peer group view.
- recommends required changes.
- ensures that work product adheres to organizational technical standards.

→ الهدف القادح على حساب مالا (PV of benefits)

for Year 1

$$\text{Benefits} = 50000 \quad n = 1$$

$$\text{PV of benefits} = V \times \frac{1}{(1+i)^n}$$

وهذا مع باقي
القيم ويطلب مع
ال (Costs) برده

$$= 50000 \times \frac{1}{(1+0.1)^1} = 45454,5$$

for getting NPV of benefits

~~NPV of current benefit + NPV of previous~~

= Current PV of benefits + Previous NPV of benefits

at Year 2

$$\text{NPV of benefits} = 86776,8$$

$$= \underbrace{41322,3}_{\text{Current PV}} + \underbrace{45454,5}_{\text{Previous NPV}}$$

→ وهذا مع ال (Costs)

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Σ
Benefits	0	50000	50000	50000	50000	50000	
PV of Benefits	0	45454,5	41322,3	37565,7	34150,67	31046,06	
NPV of Benefits	0	45454,5	86776,8	90533,5	124684,17	155730,2	155730,2
one time cost	42500	0	0	0	0	0	
Recurring cost	0	28500	28500	28500	28500	28500	
PV of Recurring cost	0	25909,09	23553,7	21412,47	19465,8	17696,25	
NPV of recurring cost	42500	68409,09	91962,79	113375,26	132841,06	150537,31	150537,31
overall NPV	NPV of benefits - NPV of costs						5192,89
ROI	overall NPV / NPV of all costs.						0.034

Break-even analysis

Yearly NPV Cash Flow	42,500	19545,4	17768,6	16153,23	14684,87	13349,81	
overall NPV Cash flow	42,500	22954,5	5185,99	22841,76	8156,89	5192,89	

Yearly NPV Cash Flow = PV of benefits - PV of costs

overall NPV Cash Flow = |NPV of costs - NPV of Benefits|

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Yr
Benefits	0	50000	50000	50000	50000	50000	
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 $\text{overall NPV Cash Flow} = \text{NPV of Costs} - \text{NPV of Benefits}$